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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/520,017	12/30/2004	Tsuyoshi Kijima	043165	9407
38834 7590 01/09/2008 WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP 1250 CONNECTICUT AVENUE, NW SUITE 700 WASHINGTON, DC 20036			EXAMINER ZHU, WEIPING	
			ART UNIT 1793	PAPER NUMBER
			MAIL DATE 01/09/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/520,017	<b>Applicant(s)</b> KIJIMA, TSUYOSHI	
	<b>Examiner</b> Weiping Zhu	<b>Art Unit</b> 1793	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 8-19 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____                                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____   | 6) <input type="checkbox"/> Other: ____                           |

## **DETAILED ACTION**

### ***Status of Claims***

1. Claims 8-19 are currently under examination, wherein claim 18 has been amended in applicant's amendment filed on October 25, 2007. Applicant's election of Invention I, Claims 8-19 without traverse in the reply filed on October 25, 2007 has been acknowledged. The non-elected Invention II, Claims 20-32 have been withdrawn in the same reply.

### ***Status of Previous Rejections***

2. The previous rejection of claim 18 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention as stated in the Office action dated June 26, 2007 have been withdrawn in light of applicant's amendments filed on October 25, 2007. The previous rejections of claims 8-17 under 35 U.S.C. 103(a) as being unpatentable over Wirtz et al. (Template Synthesized Gold Nanotube Membranes for Chemical Separation and Sensing, Analyst, 2002, 127, 871-879, First Published as an Advanced Article on the Web 14<sup>th</sup> May 2002) and the previous rejections of claims 18 and 19 under 35 U.S.C. 103(a) as being unpatentable over Wirtz et al. as applied to claim 16 above in view of Green et al. (US 6,090,363) as stated in the Office action dated June 26, 2007 have been maintained as follows:

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 8-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wirtz et al. as stated in the Office action dated June 26, 2007.

4. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wirtz et al. as applied to claim 16 above in view of Green et al. ('363) as stated in the Office action dated June 26, 2007.

With respect to the amended features of claim 18, they do not change the scope of the claim. The reasons as stated in the Office action dated June 26, 2007 are applied herein properly.

### ***Response to Arguments***

5. The applicant's arguments filed on October 25, 2007 have been fully considered but they are not persuasive.

First, the applicant argues that even if the inner diameters of the nanotubes of Wirtz et al. match the claimed inner diameters, functions as nanotubes are obviously different when the outer and the thicknesses are different. In response, the examiner notes that the range of the inner diameters of Wirtz et al. overlaps the claimed range (right column, page 877). Wirtz et al. do not limit the outer diameters of the nanotubes, which could be assumed to be broad enough to include the claimed outer diameter range. Therefore the ranges of both diameters and accordingly the range of the thicknesses of the nanotubes of Wirtz et al. would overlap the respective claimed ranges. A prima facie case of obviousness exists. See MPEP 2144.05 I. It would be

obvious to one of ordinary skill in the art to apply the ranges of the diameters and the thicknesses of Wirtz et al. within the claimed ranges with expected success, because, Wirtz et al. disclose the same utility over the entire disclosed ranges. Furthermore, as stated in the Office action dated June 26, 2007, it is well settled that merely changing the size of an article is not a matter of invention. See MPEP 2144.04 IV. One of ordinary skilled would expect substantially identical functions of the claimed and Wirtz et al.'s nanotubes.

Second, the applicant argues that MPEP 2111.02 II refers only the intended uses as recited in preambles of claims. In response, the examiner notes that the recitations of the intended uses in the instant claims 8-15 are interpreted as having similar effects as recitations of intended uses in preambles of claims. The ground of the rejections of the instant claims 8-15 based on MPEP 2111.02 II is proper and maintained.

Third, the applicant argues that Green et al. ('363) do not address the substitution of nickel into the skeleton of its carbon nanotubes; rather Green et al. ('363) teach the filling of its nanotubes with gold or nickel. In response, the examiner notes that as stated in the Office action dated June 26, 2007, Green et al. ('363) disclose that gold and nickel are functionally equivalent in terms of being used as heterogeneous catalysts (col. 2, lines 19-21). The ground of the rejection of the claimed skeleton feature relies on the teaching of Wirtz et al. (paragraph 3 of the Office action dated June 26, 2007) rather than Green et al. ('363).

### ***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Weiping Zhu whose telephone number is 571-272-6725. The examiner can normally be reached on 8:30-16:30 Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

WZ

12/26/2007

  
**ROY KING**  
**SUPERVISORY PATENT EXAMINER**  
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